



# University of Hawaii at Manoa

Environmental Center  
A Unit of Water Resources Research Center  
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January 27, 1994  
RP:0153

Ms. Rae M. Loui  
Commission on Water and Resource Management  
Department of Land and Natural Resources  
P.O. Box 621  
Honolulu, Hawaii 96809

Dear Ms. Loui:

Stream Channel Alteration Permit  
Waimano Stream  
Pearl City, Oahu

This project involves the construction of two gabion walls and two storm drain enlargements on the Waimano Stream.

We have been assisted in this review by Clifford Smith, Botany/Cooperative National Park Resources Studies Unit; James Parrish, Hawaii Cooperative Fishery Unit; and Chris Welch, Environmental Center.

## COMMENTS

The Stream Channel Alteration Permit could not be critically analyzed in detail due to the lack of information accompanying the construction plans. However, the following insights are offered within the limits of the information available.

The gabion walls appear to be built to deflect the energy of the stream flow. How will this deflection affect the banks down stream? It would seem that the force of the water will be projected in such a manner as to require future construction to protect down stream banks. Since no information is given on the condition of the channel down stream, no definitive evaluation can be made as to this effect.

It would be helpful to know the projected life of this project. The memo from GMP Associates, Inc. accompanying the construction plans states that the gabion baskets will be

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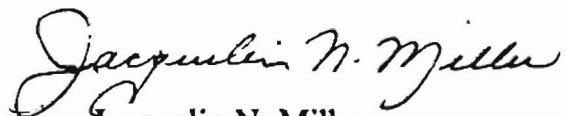
made of zinc coated steel wire. What is the life expectancy of this wire? What are the potential maintenance costs and problems of using zinc coated wire (i.e. when the wire breaks and the rocks are lost: will heavy equipment need to be brought in to rectify the situation?) If the structure is to be permanent, wouldn't a retaining wall be more cost effective in the long term?

There is a mention of vegetation being removed from the stream bank. However, no mention of the vegetation type and amount is made. In order to accurately determine the impact that removal would have, this information is absolutely necessary.

The mention of using the silt fence in accordance with best management practices is appropriate in the alteration of riparian habitats. However, the enforcement of such procedures is the key to good environmental outcomes. The management of the construction site should be required to monitor the use of silt fences so as to minimize silt loss to the stream.

Thank you for the opportunity to review and comment on the document.

Sincerely,



Jacquelin N. Miller  
Associate Environmental Coordinator

cc: OEQC  
GMP Associates, Inc.  
Roger Fujioka  
Clifford Smith  
James Parrish  
Chris Welch